

ABSTRACT OF THE INVENTION

A phase-change heat exchanger is provided for thermally conditioning a fluid. The phase-change heat exchanger includes, but is not limited to, conduits configured to convey the fluid through the phase-change heat exchanger and a foam structure in thermal contact with at least one of the conduits. The foam structure has ligaments interconnected to form a three-dimensional reticulated structure of open cells. A phase-change material is contained within the open cells and the phase-change material is configured to receive thermal energy of the fluid from the ligaments of the foam structure.